

***RS-232/422/485  
to  
10/100Base-TX Converter***

***User's Manual***

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**FCC WARNING**



This equipment has been tested and found to comply with the limits for class A device, pursuant to part 15 of FCC rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. Operation of this equipment in a residential area is likely to cause harmful interference, in which case, the user will be required to correct the interference at the user's own expense.



**CE**

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

Take special note to read and understand all content given in the warning boxes



**Warning**

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# ***1 Introduction***

## **About This Guide**

### **Welcome**

Thank you for selecting the RS-232/422/485 to 10/100Base-TX media converter. This unit is designed to provide a RS-232/422/485 point-to-point connection over twisted-pair cable where the connected devices have RS-232/422/485 interfaces. Enabling serial devices such as CNCs and PLCs to instantly connect to an existing Ethernet/ Fast Ethernet network, the Serial-to-Ethernet media converter represents a robust solution for devices controllers or MIS personnel.

### **Purpose**

This guide discusses how to install and configure your RS-232/422/485 to 10/100Base-TX Converter

### **Terms/Usage**

In this guide, the term “Converter” (first letter upper case) refers to your RS-232/422/485 to 10/100Base-TX Converter, and “converter” (first letter lower case) refers to other converters.

## **Features**

- Complies with EIA/TIA and IEEE standards
- Supports 4 wires full duplex asynchronous serial data transmission (RS-422/485)
- Supports 2 wires half-duplex asynchronous serial data transmission (RS-485)
- Supports serial port asynchronous data rates up to 115.2 Kbps
- Extended distances up to 1.2 km (24 AWG) using RS-422/485
- Auto-detecting 10/100 Mbps Ethernet interface
- Terminator feature improves signal quality and distance
- LEDs for ‘at-a-glance’ device status
- Stand-alone or chassis installation
- External power supply
- FCC Class A & CE approved

## Specifications

**Standards:** IEEE 802.3 (10BASE-T Ethernet);  
IEEE 802.3u (100BASE-TX/ Fast Ethernet); EIA/TIA RS-232; EIA/TIA-574

**Ports:** 1x UTP 100/120ohm; RJ-45 type  
1x 9-pin serial connector; D-sub, female

**Max. Distance:** UTP: 100 meters (Cat 3/4/5.)  
Serial: 15 meters (RS-232)  
1,200 meters (RS-422, RS-485)

**Data Rates:** UTP: 10 or 100 Mbps  
Serial: 50 ~ 115.2 kbps  
(asynchronous)

**Signals:** RS-232: TxD, RxD, CTS, RTS, DTR, DSR, RI, DCD, GND RS-422: TxD+/-, RxD+/-, GND RS-485: Data+, Data-, GND

**Configuration:** Parity: None, even, odd  
Data bits: 7, 8  
Stop bits: 1, 2 (only "None" parity)

## Switches:

DIP 1: Enables / disables console / data communication mode  
DIP 2: Enables / disables RS-232  
DIP 3: Enables / disables RS- 422/485 (4-wire)  
DIP 4: Enables / disables RS-485 (2-wire)  
DIP 7: Enables / disables termination (TMR)

**Power:** AC power adapter; 12V DC @ 0.8A  
Frequency: 47Hz to 63Hz

## Environment:

Temperature:  
Operating: 0°C to 50°C  
Relative Humidity:  
10% to 80%, non-condensing  
Storage:  
-20°C to 70°C  
Relative Humidity:  
5% to 90%, non-condensing

**Emissions:** FCC Part 15 of Class A & CE approved

**Dimensions:** 109.2 x 73.8 x 23.4mm (L x W x H)

**Weight:** 158 grams

## Package Contents

The package should include the following:

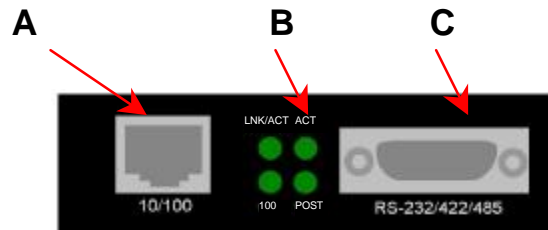
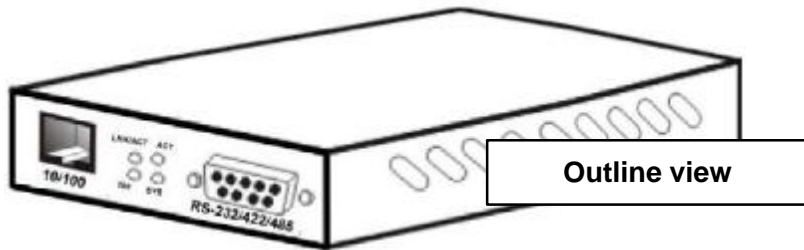
- One media converter unit
- One power adapter (please check connector type and input power specification)
- Four self-adhesive pads
- Two screws for wall-mount installation
- User's Manual

## ***2 Hardware Description***

### **Product Overview**

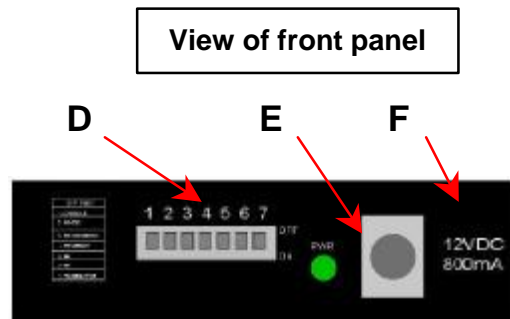
The Converter features complete Ethernet and TCP/IP network support that allows devices in industry with RS-232/422/485 connectors such as milling machines, measurement instruments, and robots to connect to LAN based automation. Other devices typically found on campus networks such as card readers, code readers, lab equipment, medical equipment, and other similar serial devices can now instantly migrate to a TCP/IP network. Additionally, by deploying the media converter, users can install the device as a standalone solution or in a chassis for rack-mount system, thereby retaining investments made in their existing serial equipment and software.

## Product Illustrations



### View of front panel

- A – RJ45  
10/100Base-TX  
Ethernet port
- B – Port LEDs
- C – Female DB9  
serial port
- D – DIP switches
- E – Power LED
- F – Power input



### View of rear panel

## 3 Installation

To install your Converter, please see the following procedures:

- Location
- Desktop Installation
- Powering On Unit
- Connecting Copper Cables
- DB9 Female Connector Pin Assignment
- Serial Connection
- Connection to DTE
- Connection to DCE
- Ethernet Connection

## Location

The location selected for installing the Converter may greatly affect its performance. When selecting a site, we recommend considering the following rules:

1. Install the Converter in a fairly cool and dry place. See *Technical Specifications* for the acceptable temperature and humidity operating ranges.
2. Install the Converter in a location free from strong electromagnetic field generators (such as motors), vibration, dust, and direct exposure to sunlight.
3. Leave at least 10cm of space at the front and rear of the unit for ventilation.
4. Affix the provided rubber pads to the bottom of the Converter for grip, and to protect the case from scratching.

## Desktop Installation

Follow the instructions listed below to install the Converter onto a desktop location.

1. Locate the Converter in a clean, flat and safe position that has easy access to AC power.
2. Affix the four self-adhesive rubber pads to the underside of the Converter.
3. Apply AC power to the Converter. (The green PWR LED on the rear panel should light).
4. Connect cables from the network partner devices to the ports on the front panel. (The green LNK LED on the front panel associated with the port should light).

This Converter can also be mounted on a vertical surface. Simply use the underside of the unit as a template to measure and mark out the position of the holes on to the surface where the unit is to be installed. Then use the two screws provided to mount the converter firmly in place.



**Warning** Please exercise caution when using power tools. Also, install this unit away from damp or wet locations, or in close proximity to very hot surfaces. These types of environments can have a detrimental effect on the converter and cables. An ideal location is a lightly cooled place such as a typical equipment room.

## Powering On Unit

The Converter uses external power supply 12V DC @ 0.8A 50~60 Hz.

1. Insert the power cable plug directly into the receptacle located at the back of the device.
2. Plug the power adapter into an available socket.
3. Check the rear-panel LEDs as the device is powered on to verify that the Power LED is lit. If not, check that the power cable is correctly and securely plugged in.

**Note:** For International use, you may need to change the AC power adapter cord. You must use a power cord set that has been approved for the receptacle type and electrical current in your country.

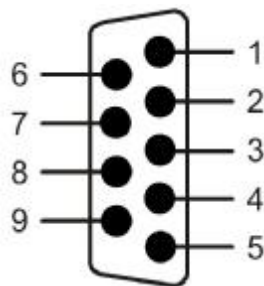
## Connecting Copper Cable

The 10/100BASE-TX RJ-45 Ethernet port fully supports auto-sensing and auto-negotiation.

1. Insert one end of Category 5 twisted pair cable into an available RJ-45 port on the Converter and the other end into the port of the network node.
2. Check the corresponding port LED on the Converter to make sure that the connection is valid. (Refer to LED chart in next section)



## DB9 Female Connector Pin Assignments



PIN	RS-232 (Full-duplex)	RS-422/485 4-wire (Full-duplex)	RS-485 2-wire (Half-duplex)	Signal Direction
1	DCD			OUT
2	RX	RX+	**DATA B(+)	IN
3	TX	TX+		OUT
4	DTR			IN
5	GND	GND	GND	--
6	DSR			OUT
7	RTS	RX-	**DATA A(-)	IN
8	CTS	TX-		OUT
9	RI			IN

**NOTE:** Bi-directional RS-485 BUS line.

## Serial Connection

This Converter features DIP switches on the rear panel that sets the unit to the correct type of cable configuration to support connection with a RS-232 / 422 / 485 device.

### Definition of DIP Switches

No	Dip description	Default
1	ON: Console / OFF: Data	ON
2	RS-232	ON
3	RS-422 / 485 (4W)	OFF
4	RS-485 (2W)	OFF
5	NA	OFF
6	NA	OFF
7	TMR (Terminator)	OFF

For setting the control function of the serial port, see the table below:

DIP 1	Serial Connection
ON	RS-232 Console
OFF	Data Communication

### **NOTE:**

1. To avoid incorrect connection, please review your DTE or DCE's connector and the converter's connector pin definition before installation.
2. For some RS-422/485 devices, which may not be designed to provide DB-9 connection, please ignore the DTE/DCE mode installation procedure and check the pin definition to connect the devices.
3. For the first time installation, you have to use console mode to setup the connection configuration with RS-232 cable.

## Connection to Data Terminal Equipment (DTE)

1. Ensure that DIP switch #1 is in the "OFF" position. (Disables Console mode)
2. Set DIP switches #2, #3 and #4 according to wire type as indicated below:

	DIP 2	DIP 3	DIP 4
RS-232	ON	OFF	OFF
4-wire (RS-422/485)	OFF	ON	OFF
2-wire (RS-485)	OFF	OFF	ON

3. Prepare TIA/EIA-574 compliant cross-over shielded cables with DB-9 connectors for RS-232 communication; the others please refer to the appendix for more detailed information
4. Connect male DB-9 connector at one end of cable to converter's female DB-9 connector.
5. Connect male or female DB-9 connector at other end of cable to DTE's male or female DB-9 connector.
6. Dip switch #7 only support RS-422/485 mode, please set it up in terms of your network configuration. The default setting is OFF.
7. Dip switch #7 only support RS-422/485 mode, please according to your network configuration to set up, the switch Dip default is off.

## Connection to Data Communication Equipment (DCE)

1. Ensure that DIP switch #1 is in the "OFF" position. (Disables Console mode)
2. Set DIP switches #2, #3 and #4 according to wire type as indicated below:

	DIP 2	DIP 3	DIP 4
RS-232	ON	OFF	OFF
4-wire (RS-422/485)	OFF	ON	OFF
2-wire (RS-485)	OFF	OFF	ON

3. Prepare TIA/EIA-574/422/485 compliant straight through shielded cables with DB-9 connectors. Please refer to the appendix for more information.
4. Connect male DB-9 connector at one end of cable to converter's female DB-9 connector.
5. Connect male or female DB-9 connector at other end of cable to DCE's male or female DB-9 connector.

## Ethernet Connection

The Converter is equipped with an auto-sensing, auto-negotiation RJ-45 Ethernet port. Simply insert one end of a Category 3/4/5/5e type twisted pair cable into the Converter's RJ-45 port and the other end into a hub, switch or computer's Ethernet card.

### **NOTE:**

The RJ-45 port accepts both 'straight-through' and 'cross-over' Ethernet cables without the need to re-configure the port.

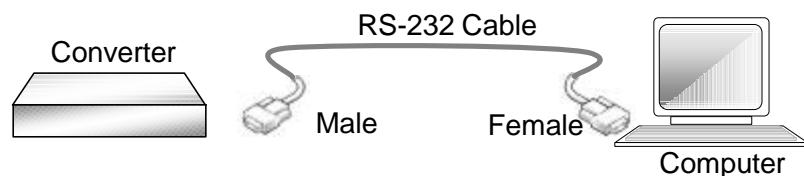
## ***4 LED Indicators***

This Converter has LED indicators located at the front of the device. The LEDs have been designed to give easy at-a-glance network status, and provides 'real-time' connectivity information. Please see below for an interpretation of their functions:

LED Indicators		
LED	Condition	Status
PWR	On (Green)	Converter is receiving power
	Off	Power off or failure
LNK	On (Green)	Illuminated when connectors are attached and link signals received
	Flashing (Green)	Data traffic passing through port
	Off	No link established
100	On (Green)	RJ-45 port in 100Base mode
	Off	Port is operating at full duplex
ACT	On (Green)	Receiving data packets
	Flashing	RS-232/422/485 data packets being transmitted or received
	Off	No data packets received
POST	On (Green)	Indicates normal operation
	Off	Converter is off-line

## 5 Configuration

There are two separate methods for configuring this media converter for use. In the first section of this chapter, the Command line Interface (CLI) or Menu-driven interface via the *Console Port* to set the device for connection to data terminal equipment in console mode will be defined. The second section will describe *CLI or Menu-driven via Telnet* configuration. Firstly, make the connection below:



**DIP Switch 1 set to 'ON' position**

**\*RS-232 wiring, please see Appendix A**

### Console Port

The Converter is accessible via a terminal emulator attached to the RS-232 console port. After completing the steps outlined to connect the devices (see Connection to Data Terminal Equipment in previous chapter), proceed with the directions below to login to the management facility using a HyperTerminal.) The

Converter is preset with a factory IP address (192.168.0.254) that must be configured to the user's individual IP address. It is important to do this so that the converter doesn't conflict with other devices with the same defaults.

#### **NOTE:**

Prior to following the instructions listed below for HyperTerminal Configuration, ensure that a serial cable connection between the media converter and remote workstation exists.

### HyperTerminal Configuration

1. The default Login name is "**admin**" with no preset password. After successful login, type the following command line to change the device IP address in CLI mode where **xxx**'s represent values between **0** and **254** and the user should enter their own IP address in this form.
  - set eth0 ip **xxx.xxx.xxx.xxx**
2. After entering the new IP address. The system will confirm whether the operation is successful.

#### **NOTE:**

Copy the new address down on a piece of paper. You will need the address when you are going to use Telnet or set up data transfer/communication connection.



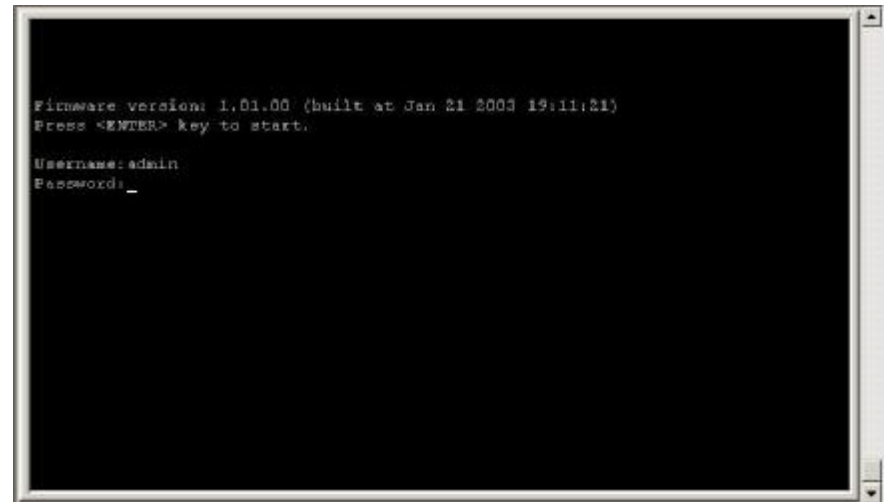
#### **Warning**

IP addresses are unique! If an address isn't available, please contact the appropriate authorities to apply for one.

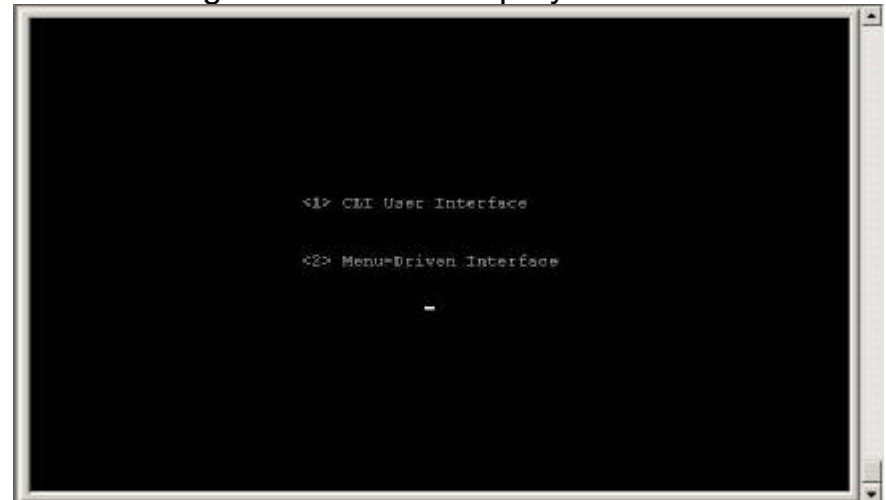
3. After you log into the system, you will see a welcome message on-screen.



4. Press **ENTER** and on the following screen, type the default username **admin**, leave the password field blank since there is no default value and press **ENTER** to proceed.
5. Select either CLI User Interface or Menu-driven Interface option by using the associated number key or using the **TAB** key and pressing **ENTER**. A Main Menu screen appears.



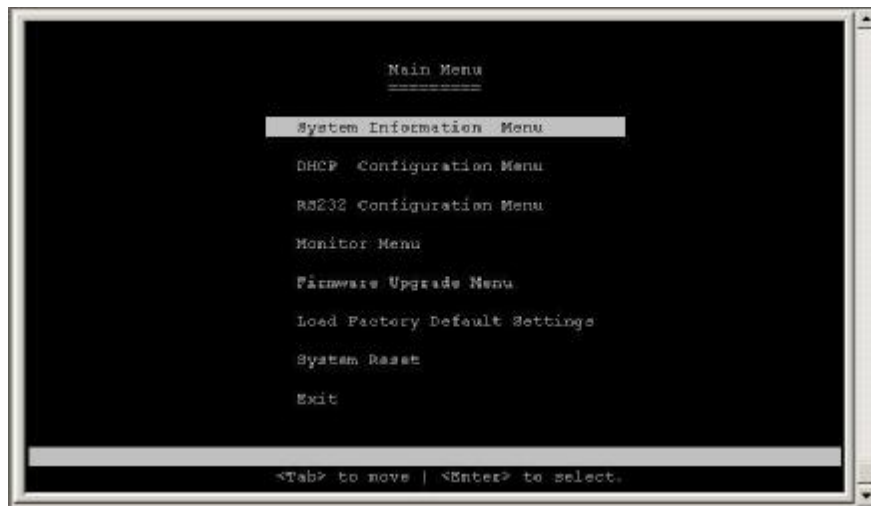
The following screen will be displayed.



Choose CLI (key in 1) or menu-driven (key in 2). If menu-driven is chosen, the system will display the following.

## Main Menu Configuration Options

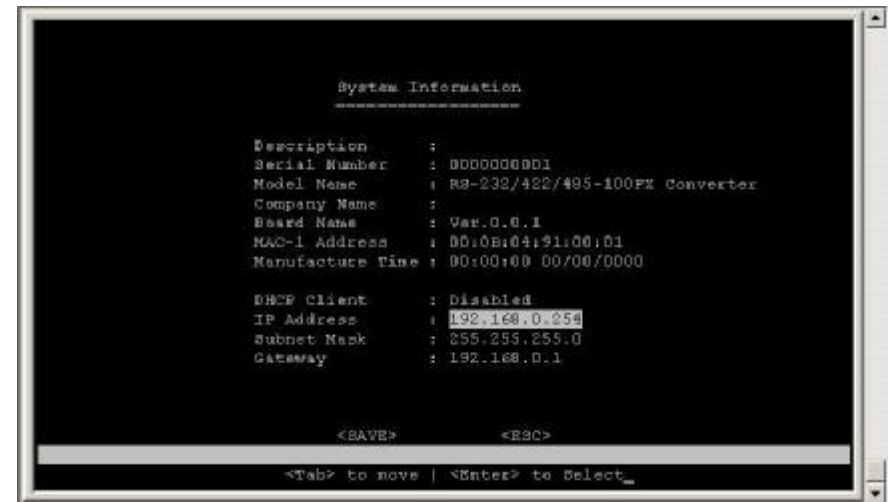
The figure below shows the Main Menu screen. From this screen the configuration options available provide the user to quickly access and adjust the media converter settings as required.



**Main Menu System**

## System Information Menu

From this menu, the user can view some system related information and default IP address. The user should set up appropriate IP address, subnet mask and Gateway for his own network. After entering a new IP address, Telnet and data communication will be based on the 'new' address.



**System Information menu**

## DHCP Configuration Menu

DHCP(Dynamic Host Configuration Protocol) allows the Converter to obtain an IP address from DHCP server automatically.

**NOTE:** A DHCP server must exist and be available in your local network prior to enabling the DHCP client.



DHCP Configuration menu

## RS-232 Transfer and Serial Port

The RS-232 Transfer menu is applicable to all RS-232, RS-422, RS-485 modes. Before transferring data through a media converter, it is necessary to set up a connection between the local and remote media converter.

The connection setup process involves the server waiting for connection service request sent by client. During this process, the default setting is AUTO mode wherein the system will determine which end is server and which end is client automatically.

**NOTE:** If necessary, the server and client can be designated manually.



RS-232 Transfer Menu & Serial Port Configuration

**Warning**

***Changes to the settings are saved to a system flash memory and do NOT take effect until a system reset or reboot has occurred. This action validates the new settings.***

From this screen, specify the IP address of the remote media converter to which the connection is being made. (The TCP port number is a number from 1024 to 65535).

**NOTE:** Local and remote media converters must have the same port number in order for a connection.

The Connection Idle Time field becomes active when there is no traffic passing through the media converter. Set the idle time value between 30 and 3600 seconds. When this time limit has been reached, the connection will be terminated automatically.

Under the Serial Port Configuration heading, the field *Operation Mode* is a “read only” value indicating one of the following modes: Console, RS-232, RS-422, RS-485. The mode is based on the DIP switches setting found on the rear panel of the media converter.

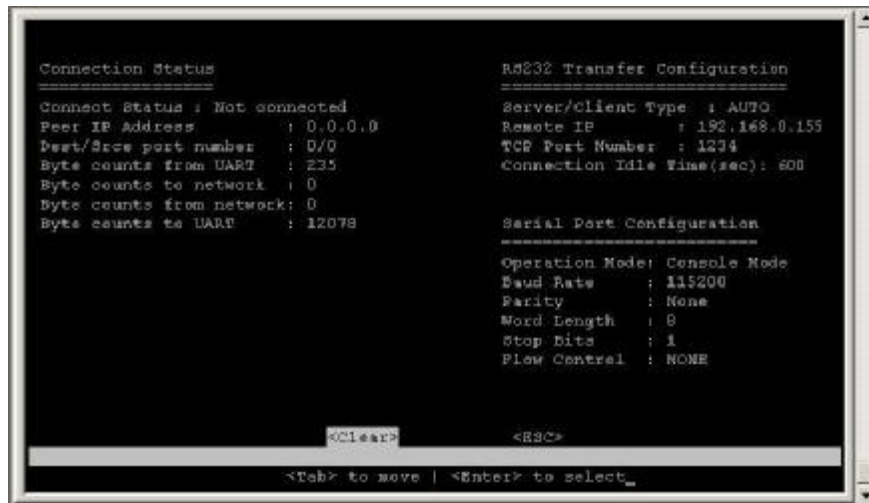
Other fields that can be modified from this screen are: communication data baud rate, parity, word length, stops bits and flow control. Defaults for these are below:

- Baud rate – 38400
- Parity – N
- Word length – 8
- Stop bits - 1
- Flow control – none



## Monitor Menu

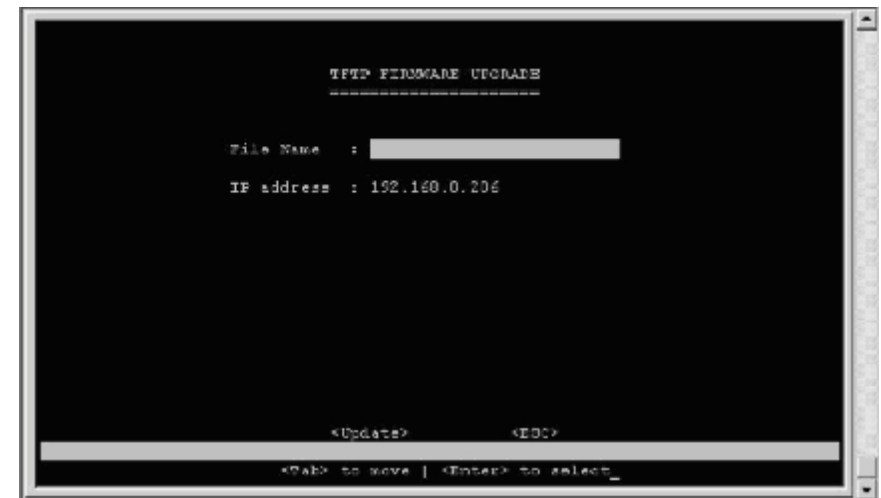
This screen provides at-a-glance system status information.



**Monitor Menu**

## TFTP Firmware Upgrade Menu

From this menu, the user can upgrade the existing firmware to newer firmware available from a TFTP server. Simply enter the file name of the updated firmware in the file name field and enter the IP address of the TFTP server in the IP address field to perform the upgrade.



**TFTP Firmware Upgrade menu**

## Load System Default

The Load System Default command allows a user to restore factory default settings to the converter. From the Main Menu, highlight the Load System Default field and hit the **<ENTER>** key to execute.

## System Restart

The System Restart allows a user to perform a 'warm' restart and validate newly saved configuration to the media converter. From the Main Menu, highlight the System Restart field and hit the **<ENTER>** key to reset the unit.



### Warning

After each configuration session, be sure to set DIP switch 1 to the 'OFF' position. Otherwise, the converter will not transmit any data.

## Command Line Interface (Telnet)

The Converter is accessible via a remote computer using Telnet. After completing the steps outlined to connect the devices (see Connection to Data Terminal Equipment in previous chapter), proceed with the directions below to login to the management facility using a remote computer.) The Converter is preset with a factory IP address that must be configured to the user's individual IP address. It is important to do this so that the converter doesn't conflict with other devices with the same defaults.

NOTE: Prior to following the instructions listed below for Remote Computer Login, ensure that a serial cable connection between the media converter and remote workstation exists.

## Remote Computer Login

1. The default Login name is “**admin**” with no preset password. After successful login, type the following command line to change the device IP address in CLI mode where **xxx**’s represent values between **0** and **254** and the user should enter their own IP address in this form.

- telnet **xxx.xxx.xxx.xxx**

2. After entering the new IP address. The system will confirm whether the operation is successful.

### **NOTE:**

Copy the new address down on a piece of paper. You will need the address when you are going to use Telnet or set up data transfer/communication connections.



### **Warning**

*IP addresses are unique! If an address isn't available, please contact the appropriate authorities to apply for one.*

3. After you log into the system, you will see a welcome message on-screen.

```

Converter>
Converter>?
[Command List]
?..... Help commands
backup..... backup configuration file
exit..... Logout
help..... Help commands
logout..... Logout
ping..... Ping a specified host with IP address
reset..... Reset system or reset factory default setting
set..... Set commands
show..... Show commands
upgrade..... Upgrade run-time firmware or configuration file
Converter>set
[Command List]
?..... Help commands
help..... Help commands
admin..... Set administrator name and password
cfg..... Set system information
eth0..... Set network eth0 configuration
idle..... Set idle time for CLI session.
xfer..... Set RS232 transfer configuration.
Converter>
Converter>_

```

4. Press **ENTER** and on the following screen, type the default username **admin**, leave the password field blank since there is no default value and press **ENTER** to proceed.

5. Select CLI User Interface option by using the associated number key or using the **TAB** key and pressing **ENTER**. A command prompt appears.

### **NOTE:**

Type “?” or “help” to view full list of commands and explanations.

## Command Definitions

- backup:** Use this command to save configuration settings to file.
- exit:** Type exit or logout and press **ENTER** to quit the program.
- help:** To access help commands list.
- ping:** Type **ping** followed by a **space**, and then the **IP address** of the device to send a test signal. If a response is received, then the device is connected. To view a full list of **ping** options, type ping and press **ENTER**.
- reset:** Type **reset config** and press **ENTER** to load factory default settings, or type **reset system** and press **ENTER** to restart the system.
- show:** Type **show** to display a full list of view commands.
- set:** To configure the management console, type the commands below, followed by the **ENTER** key.

**NOTE:** Separate each port of the command line with a space.

- set admin** - follow the prompts to change user name and password
- set cfg** - the command is for factory setting use **set eth0 ip** (new IP address) **network mask** (new network mask) **gateway** (new gateway). Use this command to set new addresses.
- set idle** - (time in seconds) – set automatic logout. when the program or communication is idle
- set xfer** - the command is for RS232 configuration and data communication setting. The command syntax is as below.

```
set xfer [arg_1 data_1] [arg_2 data_2] ...
[arg_n data_n]
[Argument List]
idle..... Set idle time of serial port
remote..... Set remote IP address
port..... Set TCP port number
baud..... Set baud rate of serial port
parity..... Set parity of serial port
length..... Set word length of serial
port
stopbits..... Set stop bits of serial port
```

flow..... Set flow control type of  
serial port  
statistics..... Clear statistics

**upgrade:** Reloads configuration file or upgrade runtime firmware.

**upgrade config** - Use this command to reload previously saved configurations. For this operation to be successful, type in the IP address and filename accurately.

**upgrade firmware** - Use this command to load new versions of software for this console. For example:

upgrade firmware xxx.xxx.xxx.xxx Soft2.bin



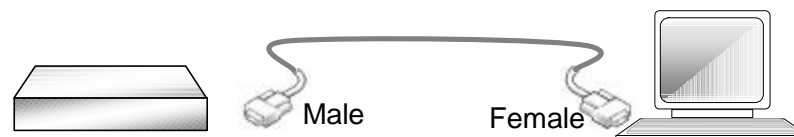
### Warning

After each configuration session, be sure to set DIP switch 1 to the 'OFF' position. Otherwise, the converter will not transmit any data.

## Appendix A

### RS-232 Wiring

#### Male-to-Female Wire (DCE->DTE)



Converter DB9 Female	RS-232 Cable Connection	PC-COM1 (DTE) DB9 Male
PIN 1	→	PIN 1
PIN 2	←	PIN 2
PIN 3	→	PIN 3
PIN 4	←	PIN 4
PIN 5	→	PIN 5
PIN 6	←	PIN 6
PIN 7	→	PIN 7
PIN 8	←	PIN 8
PIN 9	→	PIN 9

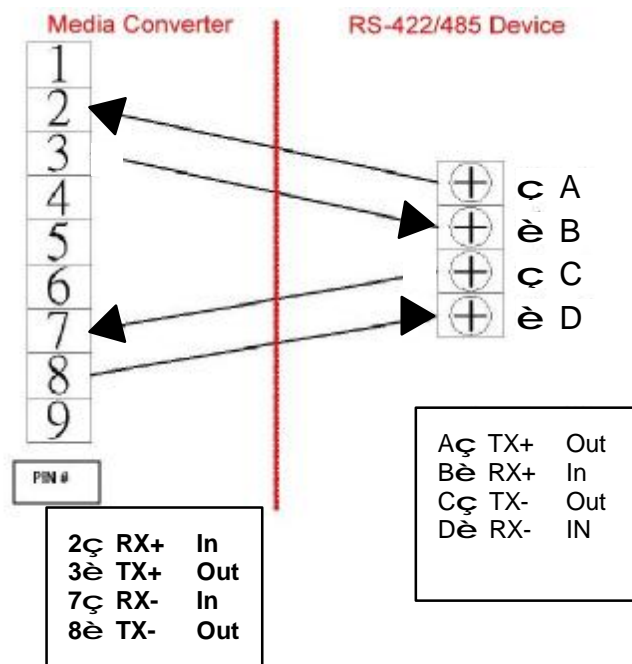
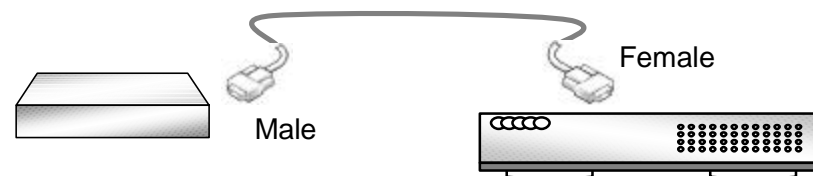
### Male-to-Male Wire (DCE->DCE)



Converter DB9 Female	RS-232 Cable Connection	DCE Device DB9 Male
PIN 1	↔	PIN 1
PIN 2	↔	PIN 2
PIN 3	↔	PIN 3
PIN 4	↔	PIN 4
PIN 5	↔	PIN 5
PIN 6	↔	PIN 6
PIN 7	↔	PIN 7
PIN 8	↔	PIN 8
PIN 9	↔	PIN 9

### RS-422/485 Wiring

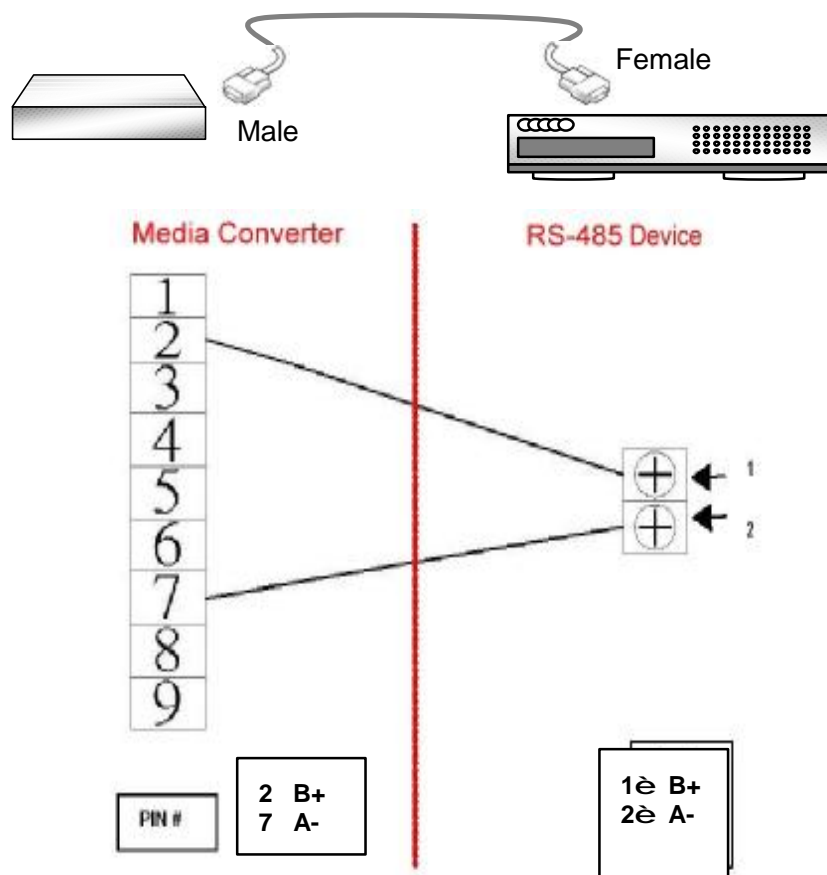
#### RS-422/485 4-Wire Definition



#### Warning

When using a RS-422/485 serial cable to connect to a device, it is imperative to check for the correct pin assignment and signal direction on the terminal plugs. Otherwise the transmission will fail.

## RS-485 2-Wire Definition

**Warning**

When using a RS-485 serial cable to connect to a device, it is imperative to check for the correct pin assignment and signal direction on the terminal plugs. Otherwise the transmission will fail.

**Appendix B****About RJ-45 Cables**

When connecting your network devices, use standard Category 3 eight-way cables for 10Base-T configurations and Category 5 cable for 100Base-TX. The pin assignments are as follows:

Pin	1	TD+	Pair	2	White/Orange
Pin	2	TD-	Pair	2	Orange/White
Pin	3	RX+	Pair	3	White/Green
Pin	4	N/A	Pair	1	Blue/White
Pin	5	N/A	Pair	1	White/Blue
Pin	6	RX-	Pair	3	Green/White
Pin	7	N/A	Pair	4	Brown/White
Pin	8	N/A	Pair	4	Brown/White

Application	* Cable Type	Application
Converter to Converter or Network Adapter	Straight-through Cable	Converter End      Hub 1 ←————→ 1 2 ←————→ 2 3 ←————→ 3 6 ←————→ 6
Converter to Switch	Cross-Over Cable	Converter End #1      Converter End #2 1 ←————→ 2 2 ←————→ 1 3 ←————→ 6 6 ←————→ 3

\*This device featured the Auto MDI/MDI-X function, therefore the cable types could be detected automatically.

## Appendix C

### Mini Converter Chassis

The Mini Converter Chassis was developed to accommodate just one media converter or slide in module. The Chassis provides AC or DC power and protection for converter units or modules. Now, network designers can plan their Ethernet, Fast Ethernet, ATM, or Gigabit networks without having to worry about the power source. Furthermore, its unique sizes allows it to be installed in locations where space is limited.

#### Features

- Simple and easy to install
- Adds fiber connectivity to otherwise copper based networks
- Supports 10/100/1000Base, copper, fiber, single/multi-mode converters with, RJ-45, ST, SC, MT-RJ, VF-45, LC, WDM connectors
- Accommodates one media converter or slide in module
- Suitable for all size of networks in all locations
- Provides internal AC or DC switching power supply
- Made from high quality durable steel
- Optional external redundant power adapter

#### Affixing Brackets

We have supplied 2 special brackets that easily attaches to the Converter. This allows for the secure placement of the converter into the Chassis. It also seals off the front of Chassis and allows it to function correctly. Following the examples below:

- Step 1** Using a Phillips screwdriver, remove two screws from the side panels on the converter.



- Step 2** Place the converter and brackets on a flat horizontal surface as illustrated above. Secure the brackets by replacing the screws.



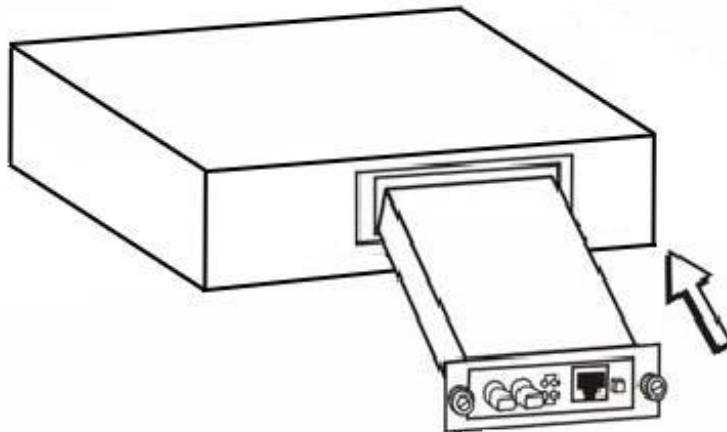


Ensure that the rails are flush-mounted with the underside of the converter. The converter is now ready for loading into the Chassis.

### Installing the Converter

Once the Converter has been attached to the bracket, it can be installed into the Chassis. Special care must be taken to ensure the correct mating of the power connector. Align the converter so that it fits between the upper and lower guide rails.

**Warning** Always ensure that the converter power socket is positioned at the base of the Chassis. Never force the Converter into the Chassis - check power socket position and alignment.



### Rear view of Chassis and specifications



#### Rear View of Chassis with AC Power Supply

Power: 100 - 240V AC (Optional 12V Adapter)  
Dimensions: 109 x 174 x 44.3 mm (L x W x H)



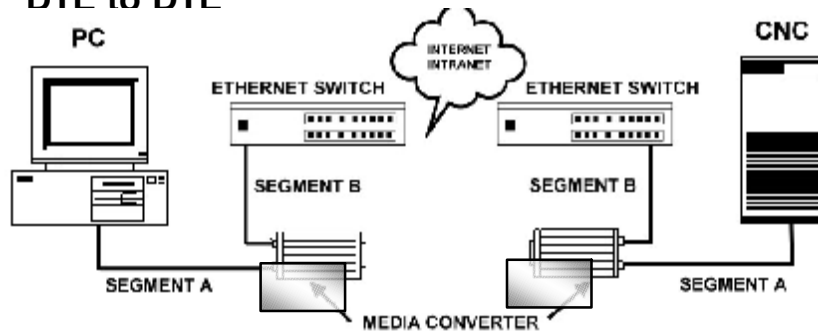
#### Rear View of Chassis with DC Power Supply

Power: -48V DC (Optional 12V Adapter)  
Dimensions: 109 x 174 x 44.3 mm (L x W x H)

## Appendix D

### Application Diagram

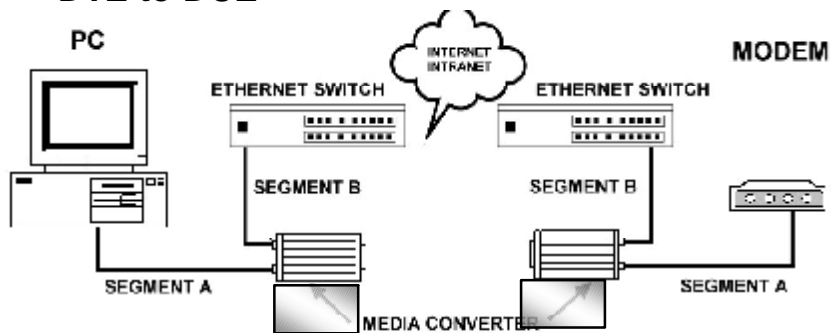
- DTE to DTE**



**SEGMENT A** – Serial cabling 1,200m (max. distance)

**SEGMENT B** – Ethernet cabling (Cat.3/4/5/5e) 100m (max. distance)

- DTE to DCE**



**SEGMENT A** – Serial cabling 1,200m (max. distance)

**SEGMENT B** – Ethernet cabling (Cat.3/4/5/5e) 100m (max. distance)

**Note:** The max distance will depend on the type and quality of the cable and the data transmission rate.